

# Operating Instructions

PanSiG

**Indicating lamps for  
panel mounting**

**> 8013/3**



## 1 Contents

1	Contents .....	2
2	General Information .....	2
3	Safety instructions .....	3
4	Conformity to Standards .....	3
5	Function of the Indicating Lamps for Panel Mounting Type 8013/3 .....	4
6	Technical Data .....	4
7	Arrangement and Fitting .....	6
8	Installation .....	7
9	Servicing .....	10
10	Transport and Storage .....	11
11	Disposal .....	11
12	Type Examination Certificate (Page 1) .....	12
13	Declaration of Conformity .....	14
14	IOM sheet .....	16

## 2 General Information

### 2.1 Manufacturer

R. STAHL Schaltgeräte GmbH  
Am Bahnhof 30  
D-74638 Waldenburg

Phone: +49 7942 943-0  
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Internet: [www.stahl.de](http://www.stahl.de)

### 2.2 Information regarding the Operating Instructions

ID NO.: 8013603300  
Publication Code: S-BA-8013/3-02-en-14/05/2008  
We reserve the right to make technical changes without notice.

### 2.3 Symbols



#### Caution!

This symbol marks notes whose non-observance will endanger your health or the functioning of the device.



#### Note

This symbol marks important additional information, tips and recommendations.

### 3 Safety instructions

The most important safety instructions are summarised in this section. They supplement the corresponding regulations which the personnel in charge must study.

When working in areas subject to explosion hazards, the safety of personnel and plant depends on complying with all relevant safety regulations. Assembly and maintenance staff working on installations therefore have a particular responsibility. A precise knowledge of the applicable standards and regulations is required.



As the user, please note:

- ▶ national safety and accident prevention regulations,
- ▶ national assembly and installation regulations (e.g. IEC/EN 60079-14),
- ▶ generally recognised technical regulations,
- ▶ safety instructions and information in these operating instructions,
- ▶ characteristic values and rated operating conditions on the rating and data plates,
- ▶ that when fitting the device type 8013/3.2 into enclosures with type of protection "Increased Safety e", the conditions given in IEC/EN 60079-0 and IEC/EN 60079-7 must be observed.
- ▶ that the backs of the devices types 8013/3.1 and 8013/3.3 must be protected against mechanical damage,
- ▶ that any damage of the fixture can invalidate the Ex protection.

Use the devices in accordance with their **designated use** and for their intended purpose only ("Function of the indicating lamps for panel mounting" type 8013/3 on page 4). Incorrect and impermissible use or non-compliance with these operating instructions invalidates our warranty provision. No modifications or alterations to the devices or components, impairing their explosion protection, are permitted. The devices and components may only be fitted if they are undamaged, dry and clean.

### 4 Conformity to Standards

The panel-mounting fixtures comply with the following standards and directive:

#### Types 8013/3.1 and 8013/3.3:

- ▶ Directive 94/9/EC
- ▶ IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-11, IEC/EN 60079-18, IEC/EN 60079-7
- ▶ IEC/EN 61241-0, IEC/EN 61241-1
- ▶ EN 60947-1, EN 60947-5-1, EN 61210-6
- ▶ EN 50007, EN 60999-1, EN 60825-1, EN 50081-2, EN 61000-6-2



The panel-mounting fixtures are approved for use in hazardous areas of zones 1, 2, 21 and 22.

## Type 8013/3.2:

- ▶ Directive 94/9/EC
- ▶ IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-11, IEC/EN 60079-18, IEC/EN 60079-7
- ▶ EN 60947-1, EN 60947-5-1, EN 61210-6
- ▶ EN 50007, EN 60999-1, EN 60825-1, EN 50081-2, EN 61000-6-2

☞ The panel-mounting fixtures are approved for use in areas subject to explosion hazards of zones 1 and 2.

## 5 Function of the Indicating Lamps for Panel Mounting Type 8013/3

The indicating lamps signal command modes in load, control and signal circuits by lighting up or going out. They are designed for single-hole fixing D 30 according to EN 50007 in combination with indicating lamp inserts type 8602/3.2.


Indicating lamp types 8013/3.1 and 8013/3.3 are explosion-protected, electrical devices. They are suitable for mounting in enclosure panels, electrical device covers, switchboards or control cubicles (type of protection "Increased Safety e" acc. to IEC/EN 60079).


Indicating lamps type 8013/3.2 are "intrinsically safe" and are used in intrinsically safe circuits.

## 6 Technical Data

Explosion protection			
Gas explosion protection	Ex e	8013/311 8013/312 8013/313	II 2 G Ex de mb IIC T6 II 2 G Ex de mb IIC II 2 G Ex de mb IIC T6
	Ex i	8013/321 8013/322 8013/323	II 2 G Ex d mb ia IIC T6 II 2 G Ex d mb ia IIC II 2 G Ex d mb ia IIC T6
Gas explosion protection (IECEx)	Ex e	8013/311 8013/312 8013/313	Ex dem IIC T6 Ex dem IIC Ex dem IIC T6
	Ex i	8013/321 8013/322 8013/323	Ex dm ia IIC T6 Ex dm ia IIC Ex dm ia IIC T6
Dust explosion protection	8013/3.1 8013/3.3	II 2 D Ex tD A21 IP 65 T80 °C	
Dust explosion protection (IECEx)	8013/3.1 8013/3.3	II 2 D Ex tD A21 IP 65 T80 °C	
Certificates	8013/3.1 8013/3.2 8013/3.3	PTB 02 ATEX 2131 X PTB 02 ATEX 2130 U PTB 02 ATEX 2131 X	
IECEx certification	8013/3.1 8013/3.2 8013/3.3	IECEx PTB 07.0010 X IECEx PTB 07.0012 U IECEx PTB 07.0010 X	
Ambient temperature	- 30 °C ... + 60 °C		
Rated voltage	Ex e Ex i	12 V - 10 % ... 254 V + 6 % AC / DC 10.8 V ... 28 V DC	

Rated current	0.014 A at 24 V DC
Frequency	0 Hz ... 60 Hz
Rated power	0.6 W
Colours	red, yellow, green, blue, white Colour filtering via coloured insert caps
Connection type	Connection cross-section: 8013/3.1 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> 8013/3.2 0.50 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> 8013/3.3 2 x 0.75 mm <sup>2</sup> connecting cable
Cable entry	Type 8013/3.1: M16 x 1.5 (d 4 - 9 mm)
Ingress Protection	Degree of protection acc. to IEC 60529 8013/3.1+8013/3.3 IP 66 8013/3.2 IP 66 / IP 20 (connections)
Electrical life	10 <sup>5</sup> lighting hours
Material	Polyamide
Weight	0.119 kg with actuator
	<b>Additional electrical data for intrinsically safe version type 8013/3.2</b>
Safety-specific maximum values	U <sub>i</sub> 28 V, I <sub>i</sub> 150 mA, P <sub>i</sub> 1 W, inductivity L <sub>i</sub> and capacity C <sub>i</sub> negligible
Binary output	STAHL 9175/10-16-11 one duct STAHL 9175/20-16-11 two ducts
Safety barrier	STAHL 9001/01-280-110-101

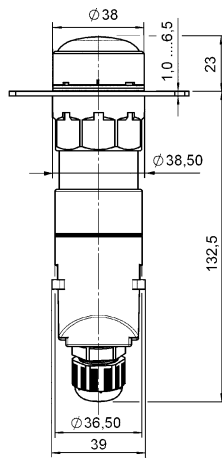
 Please consult the manufacturer if operating conditions are non-standard.

 The indication lamps can be supplied in three versions:  
Type 8013/3.1 with terminal compartment  
Type 8013/3.2 without terminal compartment  
Type 8013/3.3 with terminal compartment and internal cable

## 7 Arrangement and Fitting

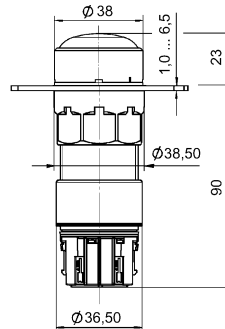
### 7.1 Dimensional Drawings

(all dimensions in mm) - subject to alterations



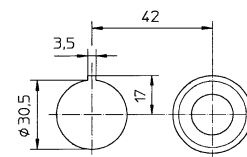
**8013/3.1 and 8013/3.3**  
**Indicating lamp with terminal**  
**compartment**

03314E00



**8013/3.2**  
**Indicating lamp without terminal**  
**compartment**

04825E00



04488E00

Cut-out for aligning several devices  
Ø 38 mm in a panel

### 7.2 Assembly

The devices are suitable for fitting into enclosure panels or switchboards with a panel thickness of 1.0 ... 6.5 mm. The fitting hole diameter is 30.5 mm.

#### Single-hole fitting

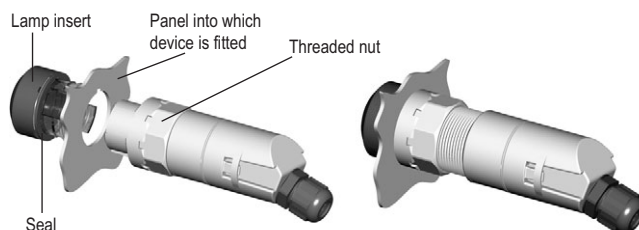


Fig. 7-1: Single-hole fitting

04857E01



#### **When fitting please note that:**

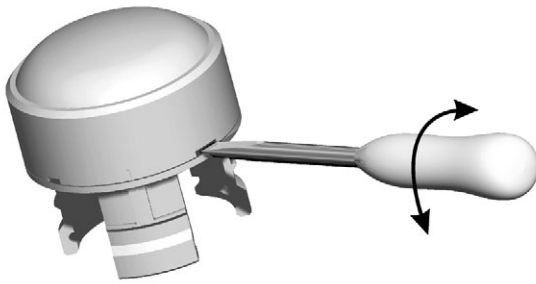
The indicating lamp may not be set at an angle!

The indicating lamp base and lamp insert must be firmly set into the panel!

The accompanying seal must be inserted and precisely seated!

- ▶ Push the lamp insert into the panel from the front and lock it in position.
- ▶ Push the indicating lamp base onto the lamp insert from the back of the panel.
- ▶ Tighten the lamp insert against the panel to which it is fitted by turning the threaded nut.
- ▶ Obtain the lamp colour required by selecting the correctly coloured insert cap.

## Changing the insert cap colour



11354E00

Fig. 7-2: Changing the insert cap colour

- ▶ Push a screwdriver (blade 0.6 x 3.5 form A to DIN 5264 or ISO 2380-1) into the slot and turn it.
- ▶ Pull the insert cap out.
- ▶ Snap the new insert cap in.

## 8 Installation

### 8.1 Mains Connection



Ensure that the maximum permissible conductor temperatures are not exceeded by suitable selection of cables and means of running them. Please also take note of the information on connections (see "Technical Data" on page 5). Particular care should be taken when making the connections.

Indicating lamps types 8013/31. and 8013/32. have screwless terminals for mains connections. Indicating lamp type 8013/33. is fitted with a plastic-sheathed cable.



04865T00

- ▶ Cable cross-sections:
  - Type 8013/3.1: 0.75 ... 1.5 mm<sup>2</sup>
  - Type 8013/3.2: 0.50 ... 2.5 mm<sup>2</sup>
  - Type 8013/3.3: 2 x 0.75 mm<sup>2</sup>
- ▶ Usable copper conductors: single wire, stranded - normal, fine or very fine

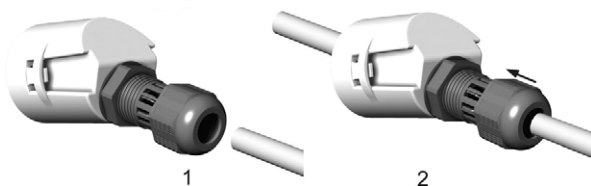
Fig. 8-1: Terminal arrangement



Please note that when connecting the free end of the cable to the main supply within an area subject to explosion hazards, the connection must be made in a type of protection corresponding to the zone.

### Cable entry on indicating lamp 8013/3.1

Use plastic sheathed cables with an external diameter of 5 ... 9 mm.

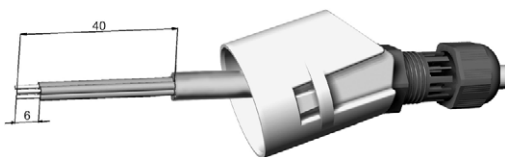


11612T00

Fig. 8-2: Cable entry on indicating lamp 8013/3.1

- Push the cable into the cable gland from behind (1).
- Push the cable into the connection cover until there is a sufficient length left free on the other side to enable connections to be prepared (2).

### Preparing the cable for type 8013/3.1



11613T00

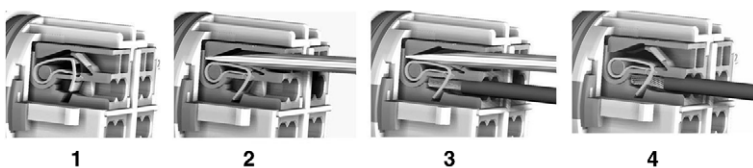
Fig. 8-3: Preparing the cable for indicating lamp type 8013/3.1

- Remove a 40 mm length of sheath.
- Remove a 6 mm length of conductor insulation.



To maintain the creepage distances, ensure that **exactly** 6 mm of insulation are removed. Note that the conductor must not be damaged (nicked) when the insulation is removed.

### Cable connections to screwless terminals

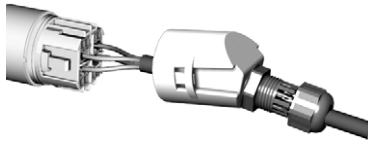


11614T00

Fig. 8-4: Cable connection to screwless terminals (types 8013/3.1 and 8013/3.2)

- Cross-section view of screwless terminal (1).
- Open (2) the terminal with a screwdriver (blade 0.6 x 3.5 form A to DIN 5264 or ISO 2380-1).
- Führen Sie den vorbereiteten Leiter ein (3). Die Schraubendreherschneide hält die WAGO CAGE CLAMP- Compact Feder geöffnet, so dass der Leiter eingeführt werden kann.
- Remove the screwdriver. The conductor is securely clamped (4).

## Closing the connection area of indicating lamp type 8013/3.1



11615T00

Fig. 8-5: Terminal compartment open

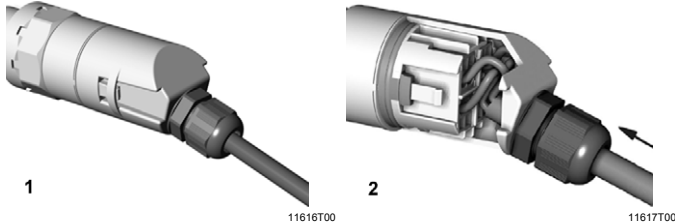


Fig. 8-6: Pushing the connection cover on

- ▶ Push the connection cover onto the terminal carrier (1) until it latches into position.
- ▶ Push the cable towards the connection cover (2).
- ▶ Tighten the gland nut to a torque of approx. 1.3 Nm.
- ▶ The terminal compartment is now sealed.

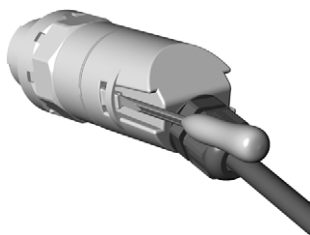


As the user, please note:  
Cables must be fixed in position and  
a suitable tension relief provided.

## Opening the connection area of indicating lamp type 8013/3.1



You can only open the connection area cover with a suitable tool.



11618T00

Fig. 8-7: Opening the connection area of type 8013/3.1

- ▶ Position the screwdriver with blade 0.6 x 3.5 against one of the latching tabs.
- ▶ Turn it by 90°.
- ▶ Pull the cover back a little and hold it in this position.
- ▶ Position the screwdriver against the second latching tab and turn it by 90°.
- ▶ Pull the cover off.

## 8.2 Commissioning

Before commissioning, ensure that

- ▶ the connections have been correctly made,
- ▶ the indicating lamp has been fitted in accordance with the standards,
- ▶ the indicating lamp is not damaged.

## 9 Servicing

### 9.1 Maintenance



Maintenance work on the devices may only be carried out by appropriately authorised and trained personnel.

Before any work commences, the devices must be disconnected from the supply.

The following must be checked during maintenance:

- ▶ that the cable is securely seated,
- ▶ plastic enclosure for the formation of cracks,
- ▶ the cable entry seal for damage,
- ▶ the function according to its designated use.

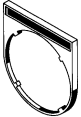





Observe the relevant national regulations in the country of use!

### 9.2 Accessories and Spare Parts



Use only original accessories and spare parts from R. STAHL Schaltgeräte GmbH. Use of another company's accessories and spare parts invalidates the warranty of R. STAHL Schaltgeräte GmbH.

Designation	Illustration	Description	Order number	Weight kg
Additional front label	 05543E00	Label mount, size 1, without symbol label Text: 1 line	8602904800	0,002
		Label mount, size 2, without symbol label Text: 1 or 2 lines	8602907800	0,003
		Label mount, size 3, without symbol label Text: 1, 2 or 3 lines	8602920800	0,004
		for actuator inserts to fit standard $\varnothing$ 30.5 mm holes Symbol labels:   without text with text; please specify text HAND - 0 - AUTO   I - 0 - II OFF - • - ON       0 - I - II 0 - I               0 - Operation - I I - II               0 - • - I		--
Calotte	 05038E00	round, $\varnothing$ 30.5 mm, with transparent lens	8602912580	0,015

Designation	Illustration	Description	Order number	Weight kg
Cap	 05039E00	red	8602920580	0,001
		yellow	8602919580	0,001
		green	8602921580	0,001
		blue	8602922580	0,001
		white	8602918580	0,001
		all colours	8602806580	0,005
Closing part	 05647E00	to close not used mounting holes $\varnothing$ 30.5 mm	8602801587	0,016

## 10 Transport and Storage

Transport and storage are only permitted in the original packing.

## 11 Disposal



Observe the national standard for refuse disposal.

## 12 Type Examination Certificate (Page 1)

**Physikalisch-Technische Bundesanstalt**  
Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE**  
(Translation)

(2) Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 02 ATEX 2131 X**



(4) Equipment: Panel- mounted indicator light, types 8013/3.2-...-  
and 8013/3.3-...-.

(5) Manufacturer: R.Stahl Schaltgeräte GmbH

(6) Address: Am Bahnhof 30; 74638 Waldenburg; Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 02-22232.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014:1997 + A1 + A2**

**EN 50018:2000**

**EN 50019:2000**

**EN 50020:1994**

**EN 50028:1987**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:



**II 2 G EEx mde IIC T6 and EEx md ia IIC T6**

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, September 13, 2002

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig



**Physikalisch-Technische Bundesanstalt**  
Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE**  
(Translation)

- (2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**  
(3) EC-type-examination Certificate Number:



**PTB 02 ATEX 2130 U**

- (4) Component: Panel-mounted indicator light, types 8013/3.2-... and 8013/3.4-...  
(5) Manufacturer: R. Stahl Schaltgeräte GmbH  
(6) Address: Am Bahnhof 30, 74638 Waldenburg, Germany  
(7) This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.  
(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.  
The examination and test results are recorded in the confidential report PTB Ex 02-22233.  
(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997 + A1 + A2    EN 50018:2000    EN 50019:2000**  
**EN 50020:1994    EN 50028:1987**  
(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This Component Certificate only serves as a basis for the issuing of certificates for equipment or protective systems.  
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified component in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.  
(12) The marking of the component shall include the following:



**II 2 G EEx mde IIC and EEx md ia IIC**

Zertifizierungsstelle Explosionschutz  
By order:  
Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



Braunschweig, September 13, 2002

sheet 1/3

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Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig



**EG-Konformitätserklärung**  
*EC Declaration of Conformity*  
*Déclaration de Conformité CE*



**R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany**  
erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt:  
*that the product:*  
*que le produit:*

**Leuchtmelder für Schalttafeleinbau**  
*Indicating light for panel mounting*  
*Voyant lumineux pour encastrément*


Typ(en), type(s), type(s):

8013/3.1-\*\*-\*  
8013/3.3-\*\*-\*

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.  
*is in conformity with the requirements of the following directives and standards.*  
*est conforme aux exigences des directives et des normes suivantes.*

Richtlinie(n) <i>Directive(s)</i> <i>Directive(s)</i>	Norm(en) <i>Standard(s)</i> <i>Norme(s)</i>
94/9/EG: ATEX-Richtlinie 94/9/EC: ATEX Directive 94/9/CE: Directive ATEX	EN 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2012 EN 60079-18:2009 EN 60079-31:2009

Kennzeichnung, marking, marquage:

II 2 G Ex d e mb IIC T6 Gb  
 II 2 G Ex d mb ia IIC T6 Gb  
II 2 D Ex tb IIIC T80 °C Db

**CE 0158**

**EG-Baumusterprüfbescheinigung:**  
*EC Type Examination Certificate:*  
*Attestation d'examen CE de type:*

**PTB 02 ATEX 2131 X**  
(Physikalisch-Technische Bundesanstalt,  
Bundesallee 100, 38116 Braunschweig, Germany, NB0102)

**Produktnormen nach Niederspannungsrichtlinie:**  
*Product standards according to Low Voltage Directive:*  
*Normes des produit pour la Directive Basse Tension:*

EN 60947-1:2007 + A1:2011  
EN 60947-5-1:2004 + A1:2009

**2004/108/EG: EMV-Richtlinie**  
*2004/108/EC: EMC Directive*  
*2004/108/CE: Directive CEM*

EN 60947-1:2007 + A1:2011  
EN 60947-5-1:2004 + A1:2009

Spezifische Merkmale und Bedingungen für den Einbau siehe Betriebsanleitung.  
*Specific characteristics and how to incorporate see operating instructions.*  
*Caractéristiques et conditions spécifiques pour l'installation voir le mode d'emploi.*

Waldenburg, 2014-07-21

**Ort und Datum**  
*Place and date*  
*Lieu et date*

i.V.

  
**Steffen Buhl**  
**Leiter Entwicklung Schaltgeräte**  
*Director R&D Switchgear*  
*Directeur R&D Appareillage*

i.V.

  
**J.-P. Rückgauer**  
**Leiter Qualitätsmanagement**  
*Director Quality Management*  
*Directeur Assurance de Qualité*

**Konformitätserklärung**  
*Declaration of Conformity*  
*Déclaration de Conformité*



**R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany**  
erklärt in alleiniger Verantwortung, *declares in its sole responsibility, déclare sous sa seule responsabilité,*

dass das Produkt:  
*that the product:*  
*que le produit:*

**Leuchtmelder für Schalttafeleinbau**  
*Indicating light for panel mounting*  
*Voyant lumineux pour encastrément*

**Typ(en), type(s), type(s):**

**8013/3.2-\*\*-\***  
**8013/3.4-\*\*-\***

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.  
*is in conformity with the requirements of the following directives and standards.*  
*est conforme aux exigences des directives et des normes suivantes.*

<b>Richtlinie(n)</b> <i>Directive(s)</i> <i>Directive(s)</i>	<b>Norm(en)</b> <i>Standard(s)</i> <i>Norme(s)</i>
<b>94/9/EG: ATEX-Richtlinie</b> <i>94/9/EC: ATEX Directive</i> <i>94/9/CE: Directive ATEX</i>	EN 60079-0:2012 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2012 EN 60079-18:2009
<b>Kennzeichnung, marking, marquage:</b>	<b>Ex II 2 G Ex d mb ia IIC Gb</b> <b>NB0158</b>
<b>EG-Baumusterprüfbescheinigung:</b> <i>EC Type Examination Certificate:</i> <i>Attestation d'examen CE de type:</i>	<b>PTB 02 ATEX 2130 U</b> (Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany, NB0102)
<b>Produktnormen nach Niederspannungsrichtlinie:</b> <i>Product standards according to Low Voltage Directive:</i> <i>Normes des produit pour la Directive Basse Tension:</i>	EN 60947-1:2007 + A1:2011 EN 60947-5-1:2004 + A1:2009
<b>2004/108/EG: EMV-Richtlinie</b> <i>2004/108/EC: EMC Directive</i> <i>2004/108/CE: Directive CEM</i>	EN 60947-1:2007 + A1:2011 EN 60947-5-1:2004 + A1:2009

Spezifische Merkmale und Bedingungen für den Einbau siehe Betriebsanleitung.  
*Specific characteristics and how to incorporate see operating instructions.*  
*Caractéristiques et conditions spécifiques pour l'installation voir le mode d'emploi.*

Waldenburg, 2014-07-21

**Ort und Datum**  
*Place and date*  
*Lieu et date*

i.V.

**Steffen Buhl**  
**Leiter Entwicklung Schaltgeräte**  
*Director R&D Switchgear*  
*Directeur R&D Appareillage*

i.V.

**J.-P. Rückgauer**  
**Leiter Qualitätsmanagement**  
*Director Quality Management*  
*Directeur Assurance de Qualité*

## 14 IOM sheet



® R. STAHL, INC.

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## INSTALLATION OPERATION & MAINTENANCE SHEET

# Series 8013/31

## Panel Mounted LED Pilot Lights

Please read this entire document  
before beginning any work.



### 1. Safety Instructions

Installation and maintenance of these LED Pilot Lights should only be performed by qualified personnel in accordance with the National Electrical Code (NEC) (NFPA 70) or the Canadian Electrical Code (CEC) and any applicable code regulations.

#### CAUTION:

- Disconnect power supply before installing or servicing these devices.
- Operate only undamaged devices with observations of the operating parameters in Section 2.

### 2. Technical Data

Please refer to the technical data on the device.

#### 2.1 Certifications

File No. E182378  
Class I, Zone 1, AEx dem IIC T6  
Class I, Zone 1, Ex dem IIC T6  
Class I, Div. 2, Groups A,B,C & D



See information on the device

**2.2 Ambient temperature range:** -30°C to +55°C.

**2.3 Storage temperature range:** -55°C to +100°C.

**2.4 Environmental protection type:** 3, 4; 4x IP66/IP20 at terminals depending on enclosure (see section 3).

#### 2.5 General electrical data:

**2.5.1 Cage clamp terminal capacity:** 2x 18 AWG to 2x 12 AWG

**2.5.2 Rated operating voltage:** 12-254V AC/DC

**2.5.3 Frequency:** 0 - 60Hz

**2.5.4 Rated operating current:** 0.014A @ 24V DC

**2.5.5 Rated power:** 0.6W

**2.5.6 Light source:** LED white

**2.5.7 Colors:** There are five lenses included in the package: red, yellow, green, blue and white. One of them should be snapped over the clear bezel. (See Section 3.3).

### 3. Installation of the LED Pilot Lights

The of LED Pilot Lights 8013/31• are incomplete, explosion protected electrical devices which are typically installed in an electrical panel or enclosure. The types of enclosures needed for the different area classifications indicated in the left column of the table below, are stated in the middle or right column.

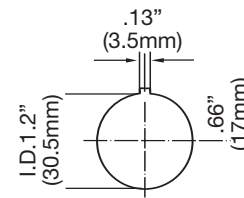
#### Enclosure Type Rating For Installation

Area Classification of Use	Pilot Light with Cap 8013/311 or with Cap & Lead 8013/313	Pilot Light with Cage Clamps 8013/312 (without Cap)
Class I, Zone 1	Enclosure Type <sup>①</sup> 1, 2, 3, 3R, 4, 4X, 12, 13	Enclosure AEx e or Ex e
Class I, Division 2 Groups A, B, C, & D	Enclosure Type 1, 2, 3, 3R, 4, 4X, 12, 13	

<sup>①</sup>Terminate leads in AEx e Terminal Box

#### 3.1 Punching Knock-outs

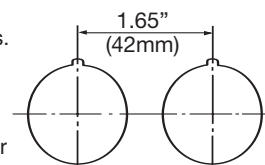
- Punch 1.2" diameter knock-outs (30.5mm) into the panel. The LED Pilot Lights can be mounted into walls between 0.04 - 0.25" (1.0 ... 6.5mm)



- Observe the clearances.

#### 3.2 Removing the bezel:

- Turn the retainer nut counter-clockwise as far as it will go.
- Pull off the bezel.



#### 3.3 Changing out the colored lens:

Use screwdriver with a blade of 0.6 x 3.5 mm push it into the slot and turn it. Pull off the lens and snap on the other.



When installing the LED Pilot Lights with terminal cap, type 8013/311, skip section 4.





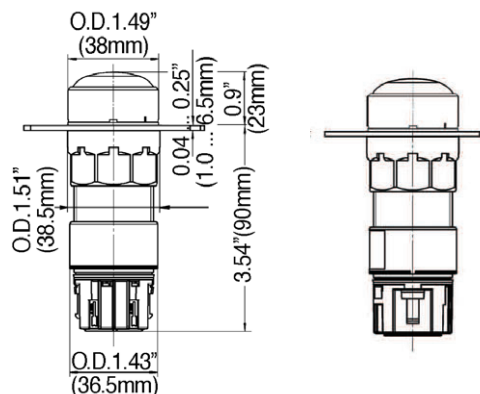
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## INSTALLATION OPERATION & MAINTENANCE SHEET

### 4. Installation of the LED Pilot Light 8013/312 into the panel.

#### 4.1 Dimensions



- Push the bezel from the front through the panel knock-out making sure the gasket is seated flat against the panel and lock it in position.
- Align the LED block to the three tabs of the bezel part and snap them together.
- Tighten the retainer nut against the panel.



#### 4.2 Cage clamp terminals

- Capacity 2 x 18 to 2 x 12 AWG.



#### 4.3 Conductor connection to cage-clamp terminals.

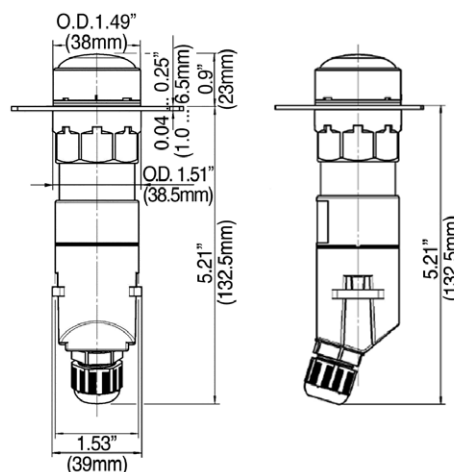


1. Cut-away, showing cage-clamp terminals with capacity of 2 x 18 to 2 x 12 AWG.
2. Open cage-clamp with a screwdriver (blade – 0.6 x 3.5mm) by inserting it into the square opening and hold the clamp open.
3. Insert the conductor into one of the rounded openings.
4. Remove the screw driver.

When installing the LED Pilot Light without terminal cap 8013/312, skip section 5.

### 5. Installation of the LED Pilot Light 8013/311 into the panel.

#### 5.1 Dimensions

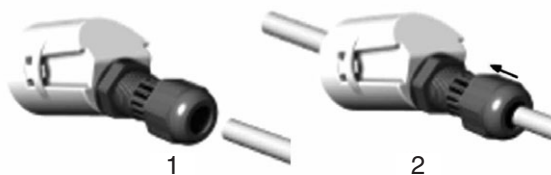


#### 5.2 To open the terminal cap use a screwdriver with blade of 0.6 x 3.5 mm.

- Position the screwdriver against one of the locking tabs.
- Turn it 90°.
- Pull the cap back a little and hold it in this position.
- Position the screwdriver against the second locking tab.
- Turn it 90°.
- Pull the cap off.



#### 5.3 Use flexible cord with O.D. 0.2" to 0.35"



- Open the cable gland.
- Slide the cord through the cable gland.
- Pull the cord into the terminal cap.



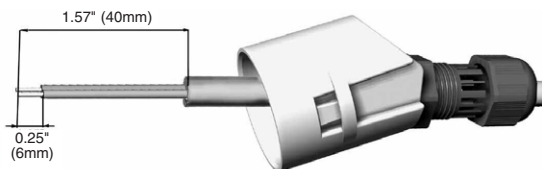


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### 5.4 Prepare the cord.



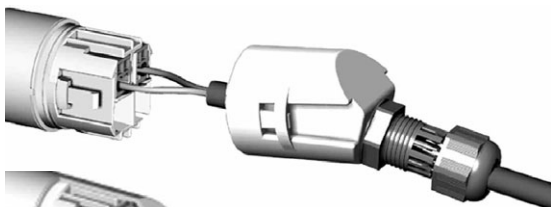
- Remove the outer jacket for the length of the cable gland.
- Strip off the insulation of the conductor 0.25".

### 5.5 Conductor connection to cage-clamp terminals.



1. Cut-away, showing cage-clamp terminals with capacity of 2 x 18 to 2 x 12 AWG.
2. Open cage-clamp with a screwdriver (blade – 0.6 x 3.5mm) by inserting it into the square opening and hold the clamp open.
3. Insert the conductor into one of the rounded openings.
4. Remove the screw driver.

### 5.6 Closing the terminal cap.



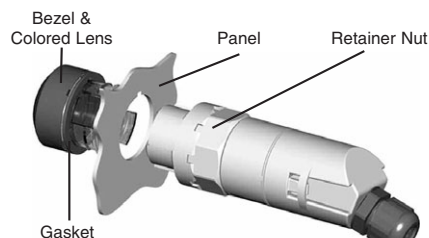
- Push the terminal cap onto the LED block until it locks into position.
- Push the cord toward the cable gland.
- Tighten the gland nut with 11 in. lbs. (1.2 Nm) torque.

#### Note:

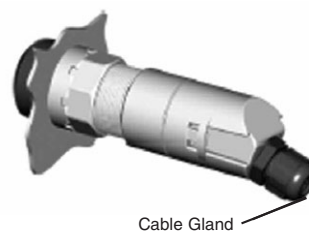
The nature of these instructions is only informative and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, safe operation and maintenance.

Since conditions of use of the product are outside of the care, custody and control of the manufacturer, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.

### 5.7 Mounting the LED Pilot Light into the panel



- Push the bezel from the front through the panel knock-out making sure the gasket is seated flat against the panel and lock it in position.
- Align the LED block to the three tabs of the bezel and snap them together.
- Tighten the retainer nut against the panel.



### 6. Maintenance

The only maintenance is a periodic inspection for damage and proper operation. Any damaged parts of the LED Pilot Lights and the panel need to be replaced promptly to ensure the electrical safety and explosion protection of the system.

### 7. Parts and Accessories

Use only original spare parts and accessories, any others would invalidate the certification and warranty.

Image	Description	Catalog Number
	Bezel	
	clear	86 029 12 58 0
	Lens	
	white	86 029 18 58 0
	yellow	86 029 19 58 0
	red	86 029 20 58 0
	green	86 029 21 58 0
	blue	86 029 22 58 0
	all above colors	86 028 06 58 0
	Close-up plug for unused openings	86 028 01 58 7





